

INSIDE

- Former U of A student's work on black hole physics is attracting widespread attention
- Senate pushes for improvements to students' financial situation

Task force recommends 'mandatory and systematic annual evaluations of teaching'

One of several suggestions directed to Vice-President (Academic)

Acting on its belief that the needs of students are of paramount importance, the U of A Task Force on Teaching and Learning recommends that the Vice-President (Academic) encourage and support the use of mandatory and systematic annual evaluation of teaching.

In releasing what it terms "Suggestions for the Vice-President (Academic)", the task force says it wishes to develop an environment in which teaching is viewed by students, faculty, and the public as receiving appropriate attention.

"The task force believes that the results obtained from mandatory student evaluations, when handled with care and sensitivity, can be used to assist all instructors (faculty members, sessionals, and teaching assistants) to better their teaching, to provide an improved learning environment for students, and to highlight the importance placed on achieving effective teaching."

Danya Handelman, Vice-President (Academic) of the Students' Union and a member of the task force, said the evaluations should

be carried out annually and that there should be five to ten universal questions on the form, with individual departments then being able to add their own questions. Robert Brundin (Library and Information Studies), who chairs a subcommittee of the GFC Committee for the Improvement of Teaching and Learning, says the subcommittee has drafted a teaching evaluation policy that will be discussed by CITL 4 March.

The 21-member task force, chaired by Roger Smith, Associate Vice-President (Academic), also recommends that the Vice-President provide support (including financial as required) for the development of First Year Experience (FYE) programs. (At present, the Faculties of Arts and Agriculture and Forestry are developing such a program and the Faculty of Science has a cohort program in which first-year students are placed in small groups with two senior students who act as mentors. This allows them to meet other first-year students and get personal attention for questions, assistance with courses, etc.)

The task force calls for the Vice-President (Academic) to provide support, including financial as required, for the development of such programs. "Many students would benefit from the introduction of FYE programs where they do not exist."

Saying that "research and teaching must be interrelated and valued equally at any outstanding postsecondary institution," the task force calls for the Vice-President (Academic) to re-emphasize the importance of effective teaching by requiring that Deans, in their annual budget submissions, state how merit increments, promotions and tenure have recognized excellence in teaching and other areas. Such a statement would "demonstrate that excellence in teaching and research are each assessed with equal care."

"The task force believes that the treatment of teaching and research must be balanced. For example, a record of mediocre teaching plus excellence in research should be treated in a fashion similar to a record of mediocre research plus excellence in teaching."

Deans, the task force recommends, should also specify how their Faculty helps instill teaching expertise in new instructors (faculty, sessionals, TAs), and just how the Faculty has encouraged improved teaching among all instructors.

The other suggestions put forward by the task force are:

- that there be additional incentives for the development and use of "alternative delivery systems" which allow students to be active participants in teaching and learning practices both on and off campus, and for the development of materials for interdisciplinary and cross-disciplinary courses;
- that release time for the development and improvement of teaching be made available;
- that there be extra support for the use of integrated interactive telecommunications technologies (the task force points out that distance as a concept does not refer exclusively to physical distance. It may relate to factors such as accessibility due to time constraints or physical disabilities);

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Miles Canada Inc commits \$3M to hypertension research

Physiology Professor Peter Pang the team leader

When Miles Canada Inc demonstrates its interest and belief in the cardiovascular research undertaken by Peter Pang, it does so dramatically.

At a news conference on campus last Friday, the firm, a leader in the development of antihypertensive drugs, announced that it is committing \$3 million in support of research being carried out by Dr Pang and his colleagues at the newly established CV Technologies Inc, a local science-driven company. This is the largest single investment ever in basic research by Miles, a subsidiary of Bayer AG of Germany. (Payments will be made in installments over two years.)

"We compete for research funding with other units of the parent company and this \$3 million represents an international vote of confidence in Canada, in Dr Pang and in the University of Alberta," said Pierre Major, vice-president of Medical and Scientific Affairs at Miles Canada. We think Dr Pang's group is the best in the field and we thank the University for developing the kind of environment that's conducive to high quality research, he said.

Martha Piper, Vice-President (Research), said CV Technologies and Miles Canada are "joining together to unravel the mysteries of hypertension."

CV Technologies' research is two-pronged. "We will be looking for substances inside our bodies that can control calcium channels," Dr Pang said. "I think we're very close to identifying and understanding those substances."

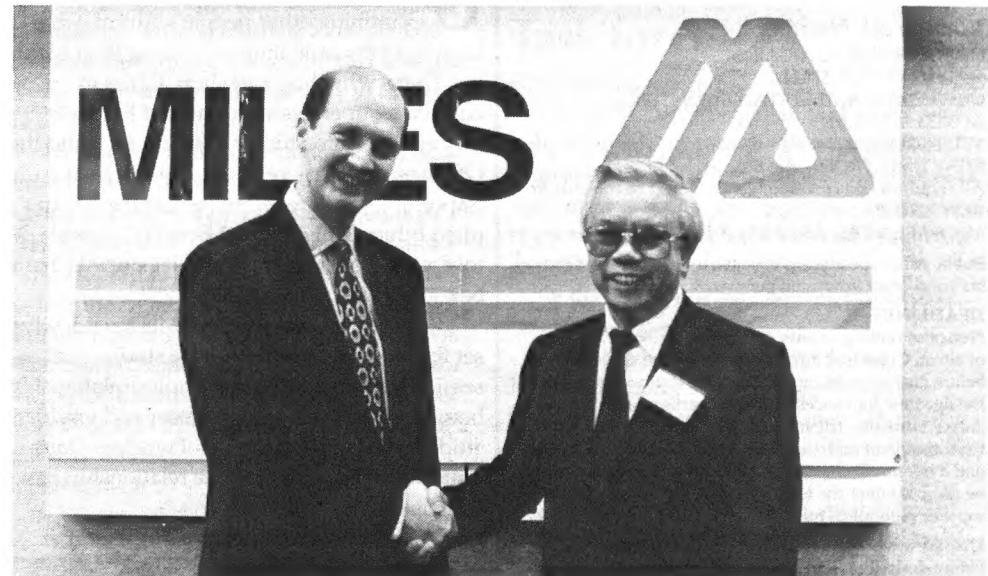
The synthetic calcium channel blockers (CCBs) currently available are used in treating hypertension and angina. Like all drugs, however, they tend to affect target tissues. The research at CV Technologies concerns tissue-specific substances which could lead to the development of safer, more effective drugs.

The other aspect of the research has to do with the development of a naturally-occurring substance found in mammalian tissue which lowers blood pressure with minimal side effects. In essence, the stimulation of cells lining blood vessels causes them to release a substance that relaxes blood vessels, thus lowering blood pressure.

It's estimated that more than 60 million people in North America suffer from hypertension.

Dr Pang, who is both Professor and Chair of the Department of Physiology, is at the forefront of research into hypertension and cellular calcium regulation. It was in his laboratory that a new circulating hormone, parathyroid hypertensive factor (PHF), was discovered. PHF has been determined to be the causative factor in 30 to 40 percent of hypertensive patients. Dr Pang subsequently established a network for PHF clinical research involving 12 institutions in five countries.

CV Technologies Inc, founded by Dr Pang and incorporated this past fall, is developing antihypertensives and modern pharmaceuticals from derivatives of herbal compounds. The company, which has 14 researchers on



Peter Pang (Physiology), right, and Pierre Major, vice-president of Medical and Scientific Affairs at Miles Canada, seal the alliance between CV Technologies and Miles Canada. The objective is to define better products to treat high blood pressure.

staff, has a licensing agreement with the University of Alberta which allows it to develop certain scientific leads into viable pharmaceutical products. It also enjoys a collaborative relationship with prominent laboratories in the People's Republic of China, Taiwan and Hong Kong.

Due in large measure to the recruiting talents of Doug Wilson, Dean of the Faculty of Medicine, and the abundant resources and opportunities associated with the Alberta

Heritage Foundation for Medical Research, Dr Pang joined the U of A's Department of Physiology. That was in 1986. A Yale graduate, he had been an assistant professor in the Department of Pharmacology at Columbia University's College of Physicians and Surgeons (he remains an adjunct professor with that institution). He has also been on the faculty of City University of New York and Texas Tech University.

Report of Task Force on Student Finance endorsed by Senators after minor changes

The Senate gave its stamp of approval to the Report of the Task Force on Student Finance last week, after minor changes—mostly of an editorial nature—were made to the draft report.

The report, which had been tabled by Senate late last year, includes many recommendations Senators believe will improve the financial situation of University of Alberta graduate and undergraduate students.

"We stand by our recommendations," said Task Force Chair Doris Badir.

The document will be sent to the President, and the Vice-Presidents will be advised to consider the recommendations. The report will also be sent to MLAs, the Students Finance Board, Alberta Advanced Education and others who may have an interest in the Task Force's recommendations. President Paul Davenport assured Senators the University would respond to the recommendations promptly. He noted that six of the recommendations, if implemented, could have a significant impact on the University's budget.

The Task Force recommends that the University:

- Accompany any further increases in tuition and fees with increased funding for need-based awards;
- Review its Board of Governors policy on differential fees for foreign students, taking into account GFC policy, other universities' policies and the contribution foreign students make to the campus;
- Strive to achieve the GFC goal of merit-based awards for the top five percent of students in each Faculty within the next five years;
- Distinguish between merit and need in its scholarship and bursary system and clarify the criteria for all awards;
- Increase the number and value of awards for continuing undergraduate students (those in third and fourth year);
- Review its policies on student housing costs, and recognize the contribution that housing makes to the quality of student life.

Senators also say it's time the University coordinated and consolidated existing student financial services into one easily accessible location. Senators want the University to expand the Student Financial Aid and Information Centre and increase financial counselling for students.

Senators also added their voices to the growing chorus of voices calling for an examination of some kind of income contingency loan repayment scheme. The Task Force wants Alberta Advanced Education to coordinate a study to examine the feasibility of an income contingency model for handling the repayment of student loans, and it wants the Alberta Government to waive the differential fee for foreign students.

The Task Force recommends that the Students Finance Board:

- Raise its monthly living allowance, indexed to inflation, and that the maximum loan amount ensure students have a total income at least equal to the current level of social assistance;

- Allow students to keep a larger portion of their part-time earnings;

- Not require the liquidation of RRSPs as part of the qualification process for student loans, except in those cases where the RRSP has been established in the last 24 months;

- Recognize scholarship money as prizes;

- Reconsider the exclusive use of line 150 of the Revenue Canada Income Tax form as an assessment of parental ability to pay;

- Adopt a more student centred approach and be more supportive of its clients, and;

- Take into account in its policies the major discrepancies in delinquency rates across the postsecondary system.

The Task Force recommends that Department Chairs be fiscally responsible in admitting only the number of graduate students who can be fully supported so that no graduate students' studies will be interrupted because of financial need. And the Task Force advises the Faculty of Graduate Studies and Research and the International Centre to prepare up-to-date information on how much it will cost students to study at the U of A.

"I don't agree with everything that's in this report," Board of Governors Finance Committee Chair Bill Grace said, "but it's an excellent report and demonstrates the Senate's important function."

Senate undertakes fundraising initiative to support its special projects

The Senate has decided to initiate a planned program of fundraising to support its special projects and some of the other activities it conducts.

At its meeting on 19 February, Senators endorsed the proposal from the Finance and Evaluation Committee and expressed the hope that their fundraising activities will put the Senate on more solid financial ground.

The Senate has also asked the University for some assurances that its core funding for basic infrastructure and operations will be maintained.

Finance and Evaluation Committee Chair Sheldon Maerov informed Senators that in order to have \$25,000 per year to support the Senate's special projects, such as task forces, it would be necessary to have a Senate Special Projects Endowment Fund with a value of about \$600,000. This, of course, necessitates that fundraising be a multi-year task.

The Senate approved a number of principles to guide the fundraising efforts: the committee will be given the responsibility for establishing and coordinating a fundraising campaign; all fundraising activities will be designed and implemented in consultation with the Development Office; individuals and corporations will be considered potential donors to the fund; Senate will be included in University publications listing beneficiaries for donations; the corporate matching gift incentive program at the U of A will also apply to the Senate's endowment fund; and Senate will, from time to time, acknowledge publicly the names of donors.

Maerov recommended that the Senate have sufficient funds before special projects are approved, and that Senate advertise specific needs and objectives of specific projects in a way that will elicit donations from key target donor groups. Senate members will be

encouraged, but not expected, to participate in fundraising activities.

Chancellor Sandy Mactaggart said the Senate used to have funding for three support positions, but lost one of those positions. Scrapping together enough money to conduct task forces continues to be a real problem, he said.

Board of Governors Finance Committee Chair Bill Grace suggested that Senate they seek approval from the Board for its budget on an annual basis. "I'd suggest that the Senate office do the same as the Board office is doing, and submit a budget to the Board Finance Committee for review."

"What we're suggesting is that the Senate be fiscally responsible, and be able to defend a reasonable dollar amount that allows us to do the quality of work we expect," said Maerov.

Ongoing discussions will be held between the Senate's and Board's finance committee members.

Ethics central to effective graduate student supervision

University professors spend a lot of time examining other people's ethical behaviour, but very little time examining their own.

That's why this workshop, Ethics in Graduate Supervision, sponsored by the Faculty of Graduate Studies and Research and the Office of the Vice-President (Research), is so important, the Director of the Centre for Applied Ethics, University of British Columbia, told a crowded University Hall Council Chamber 3 February.

Keynote speaker Michael McDonald, who set the stage for a series of case studies and sessions dealing with the complex relationship between the university professor and graduate student, said the beginning of wisdom starts with the recognition that the relationship has its tensions.

Vice-President (Research) Martha Piper said there simply aren't all-inclusive policies that will ensure equitable treatment in every possible scenario. "As we all know from our own graduate student experiences, policies pale and are a poor substitute for the personal integrity of the individuals involved."

"Universities and Faculties of Graduate Studies and Research are now more than ever struggling to develop guidelines to assist us with these supervisory processes," she said, adding that issues such as intellectual property, collaborative research and academic misconduct are becoming increasingly complex.

Dr McDonald said it's important that university professors recognize the kind of model

they're using to guide their relationships with their graduate students. Is it a contractual agreement? This model holds that both parties must keep their agreements, and that there is no coercion or deception in the agreement and no injury to third parties as a result of the agreement. Or is it a fiduciary model? This model holds that the relationship is between professionals and clients and that a power and knowledge imbalance exists.

There are other useful models, such as the didactic or apprenticeship models, he said, but it's important that a university have a variety of models in place and that professors be ready and willing to shift from one to another, depending on circumstances. A friendship or collegial model may not be appropriate in an examination situation, for example.

"The models are useful to structure our thinking about these relationships. A lot of what we're talking about is our legitimate expectations, and these models bring out what those expectations are." Dr McDonald said an ongoing dialogue between advisors and graduate students is crucial, to ensure that respective expectations are being met.

He had other concrete suggestions. First, recognize that some students may not thrive very well in highly competitive environments. Second, when evaluating and grading students' work, avoid idiosyncratic behaviour, avoid inflation of credentials, provide honest feedback and be sure there is a collective agreement on standards.

"In lots of areas we're not very good at reaching agreements on a common set of standards. If we have one group of people using one set of standards and holding to them, and those standards are out of skew with another set of standards, then graduate students get very mixed signals."

Third, pay attention to modelling. "My own discipline, philosophy, is particularly guilty of poor modelling," he said. "We were all trained to be aggressive debaters, and that meant that some very good students—particularly women—do not get appropriate modelling."

Fourth, in the area of advising, recognize the primacy of the students' point of view. If a professor works with a didactic or apprenticeship model, there may be a tendency for the professor giving advice to say that what's important is good for the discipline. "That may mean that you're driving a student into doing the wrong project or dissertation—something that would not be best for that student's intellectual growth." And advisors should be willing to accept second opinions.

Fifth, in the area of befriending, Dr McDonald said, "I'm very worried about exploitative relationships and mixing agendas. I don't think it's appropriate. I think any kind of entanglement—financial, romantic or otherwise—ought to be disentangled, or the supervisory relationship severed."

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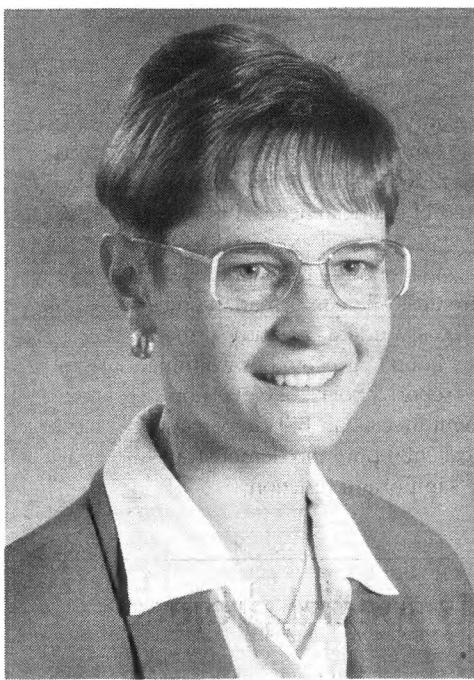
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University
of
Alberta

Employment Equity Coordinator appointed

Cathy Anne Pachnowski formerly with Canadian Human Rights Commission



Cathy Anne Pachnowski, the University's Employment Equity Coordinator

Cathy Anne Pachnowski has been appointed Employment Equity Coordinator within the University of Alberta's Office of Human Rights.

Pachnowski, whose first day on the job was 11 January, says she is impressed with the steps taken by the University in committing itself to the principles of employment equity. In particular, she is appreciative of the Presidential Committee that has "spent many hours familiarizing itself with the complex legal, ethical and very practical issues surrounding employment equity." That body, she points out, has developed a plan to implement the University's commitment to fairness in employment. "I understand that the President and the Vice-Presidents are reviewing the plan at this time."

In the meantime, Pachnowski believes that there is much work to be done. "I have already been receiving requests for information and consultation from various people on campus and am most pleased to respond. I look forward to building more bridges with the University community, particularly aboriginal

persons, persons with disabilities, members of visible minorities and women."

Later this year, she will coordinate an employment equity census of academic and nonacademic trust, temporary and casual staff.

Lois Stanford, Vice-President (Student and Academic Services), who appointed Pachnowski Employment Equity Coordinator, says she "brings not only experience in human rights to this position, but an openness and enthusiasm to the employment equity concerns of the University of Alberta."

Pachnowski received her BA in History and Religious Studies from the University of Winnipeg and her LLB from the University of Manitoba. A nonpractising member of the Manitoba Bar, she has been employed by the Canadian Human Rights Commission in Winnipeg for the last eight years. Her duties centred on the investigation of complaints of discrimination under the *Canadian Human Rights Act*. She provided consultations and educational seminars to governmental and nongovernmental managers and employees, as well as community groups.

Seminar will consider changes to NSERC's Strategic Program

On 24 February, the Research Grants Office will host a seminar on changes to NSERC's Strategic Grants Program and methods of improving strategic proposals. Jean Saint-vil, NSERC Program Officer (Food, Agriculture and Aquaculture Strategic Grants Program) will lead the seminar from 1 to 2:30 pm in 6069 Dentistry/Pharmacy Building. There will be an opportunity for private appointments with Saint-vil between 2:30 and 4:30 that day.

Anyone interested in arranging an appointment should contact Eileen Crookes at the Research Grants Office, 492-1838. Copies of the new Strategic Grants application can be obtained by calling the RGO receptionist at 492-5360.

U of C, U of A continue public forum series

Delivery of addiction services in the '90s the topic

The University of Alberta's Government Interchange Program in the Faculty of Business and the University of Calgary's Faculty of Social Work (Edmonton Division) are sponsoring a lecture on the delivery of addiction services in the 1990s.

Brian Kearns, executive director for program services, Alberta Alcohol and Drug Abuse Commission, will speak 25 February, 7 pm, in Bernard Snell Hall. This is the fifth lecture in the public forum series.

The public forum should be of particular interest to citizens wanting to know more about the province's addiction services, how they operate, how they have evolved, major issues and constraints affecting these services, and planned future directions.

There is no charge for the lecture and members of the public are invited to attend.

Task force

Continued from page 1

- that the Vice-President look at ways of enhancing support for the development of improved teaching by faculty, sessionals, and teaching assistants, and that he encourage and support the use of mandatory and systematic annual evaluations of teaching;
- that good teaching be well publicized on campus.

Vice-President (Academic) John McDonald said the task force produced a realistic set of recommendations. "They all appear to me to address issues that I think are important."

The task force, which was established at the request of Dr McDonald, said that one of the factors guiding its work was "the perception of a wide discrepancy between rhetoric and reality at the University of Alberta concerning the value and status of teaching." Its suggestions have been endorsed unanimously by the Academic Development Committee. That body has recommended that in one year's time, Vice-President McDonald report back to it on the specific actions taken with respect to the suggestions.

Dr Smith says the task force is "fully aware that the successful implementation of its suggestions will require broad-based support and participation from within the University community."

Panelists say University needs more concrete international policies

Spokespeople may disagree on whether or not the University of Alberta's efforts to solidify and strengthen its international relations are expanding or contracting, but all agree more efforts have to be made to explain to the general public the benefits of the University's involvement internationally.

"There are so many misconceptions out there, and there is a real need for the public to understand the benefits of the internationalization of the campus," said student Anna Zalik, a co-speaker on a panel that discussed international policy at the U of A. The event was held during the recent International Week '93.

"There's a perception that international students are somehow taking away jobs and money," she said. "This is a misperception and the University must take the initiative to say openly, vocally and in policy that we support international students."

"As graduates of this institution, we should be able to go out into the community with an understanding of ourselves in relation to the world," she said. Not only will that mean students with an international exposure will have better job prospects, but they'll be able to contribute more within families, workplaces and volunteer organizations.

Zalik said that during her six years on campus (she went abroad for one year), international activities have been augmented by individuals. "I think it's time for a policy to catch up with the actions of these individuals."

"Most tragically, the University does not have a context, framework or vision in which to place international development, or any other of our international activities," said Wilf Allan, Director of Alberta International. "I think we need to realize that every aspect of international life at this University interrelates and should be woven into the total life of the University."

Allan said that under the leadership of the Dean of Student Services, Peter Miller, the University has built up over the past 10 years the finest student services in the international area in spite of the absence of policy. However, in the last three years, the President's Advisory Committee for International Affairs has disappeared, the Office of the Associate Vice-President (International Affairs) has been cut and

"we've seen the removal of the policy on differential fees by the Board of Governors."

The differential fee is like income tax, Registrar Brian Silzer said. Once it's on the books, it's very difficult to get rid of it. "I don't think anyone at this University was enthusiastic

"I think we need to realize that every aspect of international life at this University interrelates and should be woven into the total life of the University."

Alberta International Director
Wilf Allan

[when it was established], but the government did prevail," he said. "On a financial basis, it would be very difficult to eliminate the fee. Now that it's in place, there have been dependencies built up."

Zalik said students concerned about the internationalization of campus would prefer to see the elimination of the differential fee.

Foreign students make up about three percent of the University's undergraduate population and about 24 percent of the graduate student population.

Allan said what the University needs is a policy for international education and a council for international education to replace the defunct President's Advisory Committee for International Affairs.

SELECTION COMMITTEE FOR CHAIR, DEPARTMENT OF HUMAN ECOLOGY

A selection Committee has begun its search for a Chair of the new Department of Human Ecology to be formed through the merger of the existing Departments of Clothing and Textiles and Family Studies. This merger is part of the merger of the Faculties of Home Economics and Agriculture and Forestry which was approved by the Board of Governors. The Chair will be responsible for the implementation of the merger as well as the normal duties of a Department Chair.

There's also a need for a university policy to govern education-abroad programming, said Bruce Caldwell, Director of the International Centre. There are pockets of policy.

"Business, for example, has some pretty good procedures in moving students and they've had a lot of assistance and cooperation from the Registrar."

Brian Evans, Coordinator for International Affairs under the Vice-President (Academic), said the University is open to the world, but it has been in a state of free fall. "We are in fact a conglomeration of activities in search of a policy."

Bob Busch, representing Vice-President (Research) Martha Piper, said the University encourages international research activity in a number of ways, one of them being through its ongoing relations with the international graduate student population. In this area, the U of A compares very favourably to other universities in Canada, he said.

Dr Busch said the international research dimension will be enhanced by the use of advanced telecommunications capabilities. "The Office of VP (Research) has been pushing very hard in this area and it's not blue sky to imagine a guest lecturer in, say, Moscow, actually teaching a class or collaborating with other researchers around the world. Unfortunately, Canadians don't have high speed networks yet, and by comparison Canada is on a cowpath while the United States is on a superhighway."

Are black hole cores radically different than previously thought?

Former U of A graduate student Eric Poisson thinks they may be, and the astrophysics community is listening

While leading lights such as the U of A's own Werner Israel and Cambridge's Stephen Hawking attract much of the attention of the astrophysics community, every once in a while the focus shifts to the more junior ranks.

Such was the case recently, when Eric Poisson, who earned his PhD under the direction of Dr Israel, submitted his thesis to the scrutiny of the astrophysics community. His doctoral work on black hole physics suggests that the cores of these stellar objects may be radically different than previously thought. That work has earned him a Natural Sciences and Engineering Research Council 1993 doctoral prize.

"The NSERC prize is really spectacular," says Dr Poisson, who also earned his master's degree under the direction of Dr Israel. "I was really overwhelmed when I heard about it. Unlike the other awards I received, I knew I was in competition for this one, but I didn't know there were only four prizes, and only two in [pure] sciences."

Dr Poisson, who earned his undergraduate degree at Laval University, received the Andrew Stewart Memorial Graduate Prize in 1991, the Governor General's Gold Medal in 1991 and the Plaskett Medal of the Canadian Astronomical Society in 1991. (The latter award is given in recognition of the best astronomical thesis in Canada.) He also has an NSERC postdoctoral fellowship for the next two years.

According to Dr Israel, if you fall into a black hole, you fall first into the outer horizon—the last outpost from which you can still send news to the outside. You fall for half an hour and you really don't notice anything unusual. You still see the stars shining overhead.

"Then you suddenly hit something harder than a brick wall, called the inner boundary, or inner horizon of a black hole. That's essentially, squish, the end of you, but in the last few seconds before you hit this wall, the most strange and wonderful experience happens," explains Dr Israel.

"This is the last place you can still receive news from the outside. In those few seconds before you hit the wall, however, you get all of the news, everything that happens in the outer

universe between now and eternity is flashed before your eyes in a few seconds. This isn't Eric's contribution—it's been known for about 20 years. But what Eric did was to examine the consequences of this."

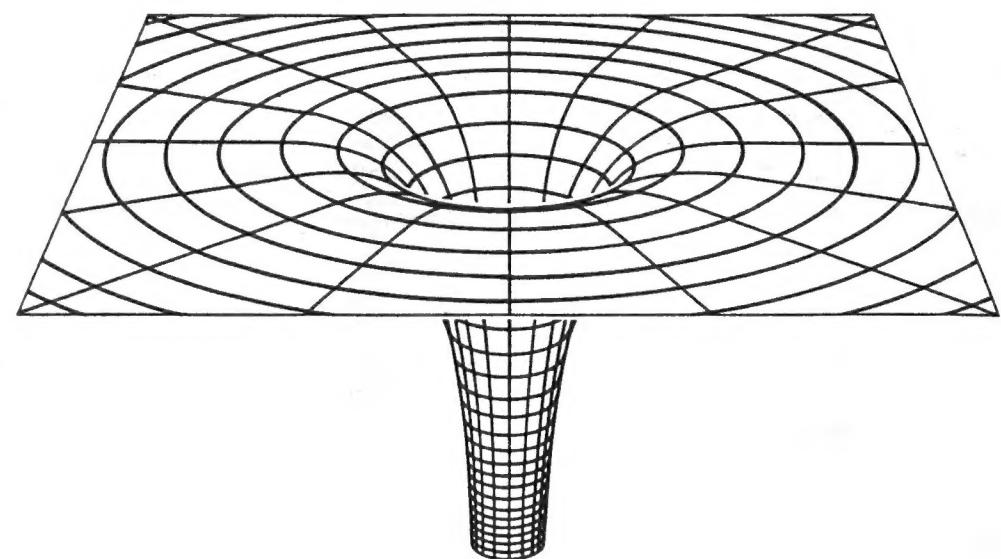
"The centrepiece of Dr Poisson's thesis is the proposal that the cores of black holes may be radically different than we have believed," says Kip Thorne, the California Institute of Technology's Feynman Professor of Theoretical Physics and the external examiner for Dr Poisson's PhD thesis. (Dr Poisson is spending the next three years with Dr Thorne at CalTech.)

"Until now, most relativistic astrophysicists have thought that all matter falling into a black hole would be destroyed in a chaotically oscillatory BKL (Belinsky-Khalatnikov-Lifshitz) singularity," Dr Thorne says. "Dr Poisson presents calculations that reveal a new, previously unknown type of spacetime singularity, the mass-inflation singularity, which—he argues rather convincingly—is likely to be at the core of a black hole rather than a BKL singularity." According to Dr Israel, calculations confirm Dr Poisson's thesis stands up to scrutiny.

"For somebody inside the black hole," Dr Israel continues "external processes are enormously speeded up, for example, wave motions. For example, the gentle waving of a lady's fan in the outside universe is going to hit you like a pneumatic drill in those few seconds. This means there's a tremendous amplification of energy near the inner horizon.

"The black hole is formed in a gravitational collapse. Then the black hole quivers for a while, very much like a soap bubble which is settling down into a perfectly smooth form. It takes a few seconds to do that. It fills the inside of the black hole with a very fine drizzle of gravitational waves generated by this quivering. This fine drizzle is transformed into a shower of hail across the inner horizon—and these hail stones are bloody heavy!"

"They fall in through the inner horizon, into the central core of the black hole. What Eric found was that they enormously inflate the mass of the central core, so that the black hole becomes extremely heavy on the inside.



Eric Poisson's work on black holes has caused a stir among astrophysicists around the world.

An outside observer would never notice, because news of the drastic changes propagates with the speed of light ... but nothing that travels at the speed of light can get out of the hole.

"This result is so fantastic, of course, that it's received quite a bit of publicity," says Dr Israel, pointing to a piece written and distributed across the continent recently by the New York Times News Service. According to Dr Thorne, Dr Poisson's thesis, titled *The Internal Structure of Black Holes*, and examination were superb. "They were among the best five (out of roughly 100) that I have seen during the past 25 years."

Dr Poisson says his thesis is very much about the application of the theory of general relativity to the inside of black holes. "Hopefully, we'll be able to learn more about general relativity and the consequences of our own physical laws by testing them in extreme circumstances."

"I feel very pleased about the way Eric has developed," Dr Israel says. Asked whether this was an example of good people attracting good people? Dr Israel mused, "I suppose I just exercised my charm on Eric, and lured him to come to Edmonton, instead of going to

Cambridge to work with Stephen Hawking." (It's tit for tat because Raymond Laflamme, a friend of Dr Poisson's who also went to Laval, decided to work with Hawking.)

"Eric and I really hit it off," recalls Dr Israel. "We fused into one personality, practically. He was in my office every day and we argued and discussed for at least an hour a day. Then we went away and did some calculations and compared results. It was a fun collaboration. I worked with him on essentially equal terms."

The decision to work with Dr Israel was "the best thing that I could have ever done," Dr Poisson says. "I have been privileged to know and work with such a kind and clever man; he will serve forever as a model."

Dr Poisson plans to spend the next three years at CalTech working on problems of gravitational radiation from coalescing binary stars. "I really like the work I've done since I've been here and the new direction I've taken. I want to understand gravitational waves better," he told *Folio*, adding that within 10 years or so researchers will likely be able to observe them directly and then begin to decode them.

English professor wants to raise profile of Canadian literature among Australian students

Sonia Mycak spending six weeks at U of A preparing course

The first Canadian novel Australian Sonia Mycak ever read was written by Margaret Atwood. "I didn't realize at the time that she was Canadian," explains Mycak, who now teaches English at the University of New South Wales.

"Our exposure to Canadian literature is so small ... and is really undiscovered in Australia." For example, Atwood's work will typically be included in a course devoted to 20th century women writers. Robertson Davies' work might be included in a course devoted to contemporary literature. But Mycak wants to change that.

She's been given a faculty enrichment grant from the Canadian High Commission in Canberra to establish a course, *The Literary Construction of Canada: Studies in Prose Fiction*, at UNSW. It will be offered by the university's School of English. All of the texts will be Canadian.

She wants to establish the course for a number of reasons. There are similarities between the two countries: both are ex-colonies that were once subject to British influence and both are multicultural societies, she explains.

"There's an awakening among Australian students about the rest of the world. "There's a lot of student demand for non-British literatures, and students aren't happy to just be going to an English Department anymore. They want to go to a literature department." Mycak says her own department now offers a wide range of non-British literatures, and Australian academics are no longer satisfied simply focusing their work on the British literary canon.

Mycak had her choice of Canadian universities at which she could pull the course together. She chose the U of A because it had a large English Department and a Comparative Literature Department. The U of A offers

a variety of Canadian literature courses, and several people are teaching such courses, she says, pointing out that smaller Canadian universities might have only one or two faculty members teaching Canadian literature.

When she was in Canada about a year ago, she became increasingly aware that there was more to Canadian literature than "the two Margarets". Mycak was conducting PhD research on Atwood's work at the time, so it was only natural for her to seek expertise and advice in Canada. She's recently submitted her PhD thesis, titled *Split subjectivity as it surfaces in Atwood: a psychoanalytic reading*. In that work, she examines the collapse and disintegration of identity and the reformation of identity, using psychoanalytic and phenomenological theories of the person.

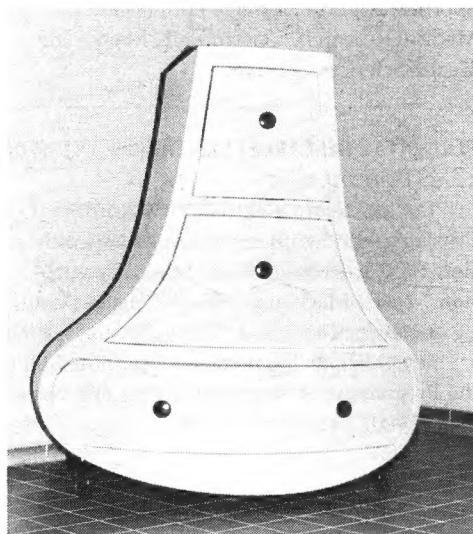
But while her own work has focused on one of Canada's literary giants, she wants students in Australia to get a sense of the different ethnic voices speaking and writing

in this country. The course will likely include works by Gabrielle Roy, W.O. Mitchell, a native writer, and a Ukrainian-Canadian writer. "I'm steering away from the writers we might already know."

She'll be choosing texts, bringing back course materials and developing reading outlines. And she wants to establish a library of Canadian materials at UNSW—a task she acknowledges will be hampered by the funding crisis at Australian universities. On the other hand, she has a strong supporter in the Dean of Arts. "I'm hoping that this course initiates a broader based Canadian studies program at our university," she says.

Mycak is also interested in establishing a comparative Canadian-Australian literature course. "I think we're losing the 'cultural cringe' in Australia," she says, believing that Australians are no longer as likely to denigrate everything Australian, and are more willing to compare themselves to others.

Work at MDF DECO catches and holds the eye



Susan Schulze's work is *untitled*.



Jennifer Gromada and her MDF creation, "The Daydreamers Vanity."



"Writing Desk" by Delmer Cox. Each student's project represents about one-quarter of a year's work in the class.

With their hands cooperating fully with the vision in their mind's eye, the 20 students taking Furniture Design produced pieces that are ambitious and interesting from any and all angles. All the more remarkable is that they worked within a tight time frame.

"They started designing before Christmas and fabrication after the holiday break," recounts the class's instructor, Bruce Bentz. "They literally had about four weeks to materialize these things and they're new to furniture making ... this is only their second individual project. I think they've done remarkably well." Much of the proof of that can be seen in the curvature where once there was a flat piece of medium density fibreboard.

For MDF DECO (Medium Density Fibreboard and its DECOrative potential), each student considered form, function, stylistic characteristics, finishing and aesthetics for the express purpose of realizing what Professor Bentz calls "not the gilding on the lily but the lily itself."

Besides such works of the imagination as "Nouveau Canadiana", "Forris Table", "Wonkhaüs Wardrobe", and "Nostalgic Form", MDF DECO has sketches, colour studies and drawings that, as Professor Bentz says, let people know there's a lot of thinking behind each of the decisions that were finally taken. Look, too, for models and full-scale mockups of various pieces.

Unfortunately, MDF DECO's run at FAB Gallery is a short one (10 to 21 February).

Assessment by course weight model replaces program-based method of charging students

Graduate students registered in course-based master's degree programs will now be charged fees based on an assessment by course weight.

The Board of Governors approved the proposal 5 February. Board Finance Committee Chair Bill Grace described the changes as fair and appropriate.

Graduate Students' Association President Steven Karp said graduate student fees have traditionally been charged based on the assumption that students are in thesis-based master's programs. In general, the GSA is very supportive of the changes, he said, acknowledging the growth in the number of course-based master's programs.

The proposal calls for all students in course-based master's degree programs to be charged per course weight of registration in courses and research at a set rate for all terms. The establishment of that rate would be designed to collect approximately the same total fees as the existing assessment system. The initial assessment rate per unit of fee index will be set at the equivalent of \$38.28 (1992-93 rates).

Students in course-based master's programs in the Faculty of Graduate Studies and Research will be charged the fees according to the new model beginning with Intersession 1993.

During the fiscal year 1993-94, the University has developed a transitional support program. When course registrations have been finalized each term, the Graduate Registrar will analyze the registrations of all students in course-based master's programs. For those students whose instructional fee assessment for the term exceeds by more than \$200 the value of what the instructional fee assessment would have been using the previous program fee model (with 1993-94 rates), the University will rebate to the student in the appropriate manner the amount by which the assessment exceeds the course-weight-fees-plus-\$200 limit.

The funding for the reimbursement program will come from the President's Contingency Fund to a maximum of \$30,000 for the fiscal year. In all subsequent terms, following fiscal year 1993-94, course-based master's program students will be assessed for the full value of instructional fees calculated according to the assessment by course weight model (ABCW).

"For as long as the FGSR has operated, graduate fees have been assessed on the basis of a program fee, that is, a set fee of so many dollars (or later, so many terms of full fees) to be paid for the program of registration," explained Paul Pearlstone, Graduate Registrar, in the proposal from FGSR.

A student registered in a program pays fees term by term until the program fee is paid in full; thereafter, if more time is necessary to complete the program, a smaller fee (called by many names over the years, but currently known as the post-program fee) is assessed for as many terms of registration as are necessary for completion, he said.

The Faculty believes the ABCW model is better suited than the program fee model to course-based master's students, particularly those who are off-campus or part-time students, and those who take courses during the Intersession. The Faculty has also noticed an increase in complaints about the existing system from part-time and course-based master's students.

The new way of charging fees will pose less of a financial strain on students who are studying part-time, and will spread the costs of the degree program more evenly over time. As it is now, the program fee frontloads the bulk of the payments into the early years of the program.

Officials in FGSR expect there will also be a growth of off-campus, course-based master's programs offered by the University, in addition to those already being offered outside the city.



Winnifred Kolodkeywych (centre) reviews the collection with Rosemary Nielsen, Chair of the Department of Classics, and Alastair Small.

Antiquity in individual slipcases

On a scale of I to X, the 22 Roman coins that were recently donated to the Department of Classics rate a X.

"They have a lot of historical relevance," says Alastair Small, a professor in the department. "The donation adds to and improves an existing collection."

The coins, plus a Roman sardonyx gemstone with intaglio female head set in a modern fingering, are from the collection of David Kennedy of Viking, Alberta, and were formally presented to the department by Kennedy's daughter, Winnifred Kolodkeywych of Mundare.

As well, she gave the Library and the Classics Department a number of catalogues and books pertaining to numismatics.

The coins are primarily portraits of Roman emperors and family members and are very representative of Kennedy's primary interest—portrait coins in Caesar's time. All of the coins were hand-struck, with at least two of them,

RETIREMENT PLANNING SEMINARS FOR ACADEMIC STAFF

The Office of the Vice-President (Academic) and the Association of Academic Staff of the University of Alberta (AASUA) invite members of the AASUA and their spouses to attend a two-day retirement planning seminar. Each of the two seminars is tailored to a specific age group and will address keys to successful planning, financial planning and lifestyle considerations.

Seminar 1: Under 50 Years of Age

April 19 2:30 - 5:00 and 7:00 - 10:00
April 20 8:30 - noon and 1:00 - 4:30

Seminar 2: 50 Years of Age and Over

April 21 2:30 - 5:00 and 7:00 - 10:00
April 22 8:30 - noon and 1:00 - 4:30

The seminars will be held in the Stollery Centre, 5th Floor, Business Building. There is no charge; coffee and lunches will be provided.

Enrollment is limited and will be on a first-come, first-served basis. If you are interested in attending, please call Lori Callahan at 492-5321. Registration deadline: March 11, 1993.

ACCOUNTING AND MANAGEMENT INFORMATION SYSTEMS

19 February, 2 pm

Victoria Mitchell, Florida State University, "An Exploration of the Relationship Between Business Process Redesign and Information Technology Infrastructures." B-05 Business Building.

ALBERTA HERITAGE FOUNDATION FOR MEDICAL RESEARCH

26 February, 2 pm

Ellen K Shibuya, postdoctoral fellow, Department of Anatomy and Cellular Biology, Harvard Medical School, "Ras, Mos and Cyclins Activate MAP Kinase *In Vitro* in Extracts of Quiescent *Xenopus* Oocytes." Presented by Anatomy and Cell Biology. 5-10 Medical Sciences Building.

26 February, 2 pm

Ulrich Hartl, associate member, Cellular Biochemistry and Biophysics Program, Rockefeller Research Laboratories, Memorial Sloan-Kettering Cancer Center, "The Role of Molecular Chaperones in Protein Folding in the Cell." 2-27 Medical Sciences Building.

ANATOMY AND CELL BIOLOGY

23 February, 4 pm

Clint L Makino, postdoctoral fellow, Department of Neurobiology, Stanford University School of Medicine, "Molecular Mechanisms of Visual Transduction." 5-10 Medical Sciences Building.

ASSOCIATION OF EMERITUS PROFESSORS: UA

25 February, 7:30 pm

Gerald McCaughey, "Is Shakespeare Relevant?" Emeritus Centre, 11034 89 Avenue.

BOTANY

4 March, 3:30 pm

Hugues Massicotte, Forest Sciences Department, University of British Columbia, "Aspects of Ectomycorrhizal Biology Using Morphological, Structural, and Ecological Approaches: The Truffle Genus *Rhizopogon*." M-149 Biological Sciences Centre.

CANADIAN ASSOCIATION OF NEUROSCIENCE NURSES

27 February, 9:30 am

Susan Hirst, neurologist, Royal Alexandra Hospital, "Break Out of Migraine Misery." Registration: 492-1644. Bernard Snell Hall, Mackenzie Health Sciences Centre.

CANADIAN FEDERATION OF UNIVERSITY WOMEN

22 February, 7:30 pm

Colleen MacDougall, "How Being a Professional Influences Our Lives as Women." All women university graduates are welcome. Information: 435-1277. Faculty Club.

CUSO

23 February, 7:30 pm

Greg Brandenburg, Global Education Coordinator with CFF, "Our Consumption and Global Development." Room 133, Concordia College, Highlands Campus, 7128 Ada Boulevard.

CHEMICAL ENGINEERING

4 March, 3:30 pm

GZ Lu, "Chemical Engineering Problems in Cultivation of Animal Cells." 342 Chemical-Mineral Engineering Building.

DENTISTRY

24 February, 6:30 pm

Kathy Hilborn, "Back Health for the Dental Professional." Light supper. Fee. Information and registration: Debbie Grant, 492-5023. 4069 Dentistry-Pharmacy Centre.

TALKS

EAST ASIAN LANGUAGES AND LITERATURES, ART AND DESIGN, CLOTHING AND TEXTILES, AND ANTHROPOLOGY

3 March, 3:30 pm

Joan Stanley-Baker, director, Arts Center at the National Tsing Hua University, Taiwan, "Adventures in Chinese Art and Archeology." 2-20 Fine Arts Building.

4 March, 3:30 pm

Dr Stanley, "Heian Courtly Art: The Founding of a Feminine Culture in Japan." 2-20 Fine Arts Building.

ENGLISH

1 March, noon

Linda Hutcheon, professor of English and Comparative Literature, University of Toronto, and Michael Hutcheon, associate professor of Medicine, "Sexuality, Sin, Suffering: Syphilis, Social Decline, and...Opera." L-3 Humanities Centre.

1993 Edmund Kemper Broadus Lectures

Fred Radford, "James Joyce and the Texts of Irish Identity." 1 March, 4 pm

"The Artist and the Nets: Self-Exile and its Contradictions." L-1 Humanities Centre.

2 March, 4 pm

"Forging the Conscience of the Race: Whose Conscience?" L-1 Humanities Centre.

3 March, 4 pm

"The Battle of the Icons: *Ulysses* and Dublin in 1903." L-1 Humanities Centre.

4 March, 4 pm

"Cultural Landscapes: Towers and Statues; Beds and Beaches." L-1 Humanities Centre.

ENTOMOLOGY

25 February, 4 pm

Ed Fuller, "A Generic Reclassification of the Tribes Elaterini and Pomachiliini (Coleoptera: Elateridae)." TB-W1 Tory Breezeway.

FOOD SCIENCE

1 March, 4 pm

Robert Stark, Agriculture Canada,



University of Alberta Alumni Association Reginald Charles Lister Memorial Scholarship

The University of Alberta Alumni Association awards an annual scholarship in memory of Reg C. Lister, who spent almost 50 years serving the University, many of them as Superintendent of Student Residences.

The scholarship has a value of \$2,000 and will be presented to a full-time undergraduate student who has attended the University of Alberta for at least the two previous years.

CRITERIA

Major emphasis will be placed on the applicant's contribution to campus life and to the University of Alberta community.

The applicant should have a satisfactory academic standing and plan to continue studies at the University of Alberta in 1993-94.

Previous recipients of major Alumni Association scholarships (the 75th Anniversary, Maimie S. Simpson Memorial and Reginald C. Lister Scholarships) are not eligible for this award.

Application forms and further information may be obtained from:

Office of Alumni Affairs
430 Athabasca Hall, University of Alberta
Edmonton, Alberta T6G 2E8

The application deadline is Friday, 5 March 1993. The scholarship will be awarded during the 1993-94 academic year.

Chicago, "Cellular and Molecular Regulation of Intestinal Fluid and Electrolyte Transport." Sponsor: Alberta Heritage Foundation for Medical Research. Classroom F, Mackenzie Health Sciences Centre.

PERINATAL RESEARCH CENTRE

23 February, noon

Tamas Zakar, "Regulation of Amnion Prostaglandin Synthesis by Glucocorticoids: A Role for Corticosteroids in Human Parturition." 2J4.02 Mackenzie Health Sciences Centre.

2 March, noon

Bev O'Brien, "Nausea and Vomiting During Pregnancy: Strategies for Increasing Comfort." 2J4.02 Mackenzie Health Sciences Centre.

PHYSICS

19 February, 2 pm

Barry Robertson, Department of Physics, Queen's University and Sudbury Neutrino Observatory Institute, "The Sudbury Neutrino Observatory Project." V-121 V-Wing.

PLANT SCIENCE

2 March, 12:30 pm

Mike Alexander, "Livestock Grazing in Forest Cutbacks." 1-06 Agriculture-Forestry Centre.

UNIVERSITY TEACHING SERVICES

2 March, 3:30 pm

Bill Isley, Northern Alberta Institute of Technology, "Improvement Through Self-Assessment." 269 CAB.

3 March, 3 pm

Karen Kovach, "Personalized Assistance in Learning." 269 CAB.

ZOOLOGY

19 February, 3:30 pm

Malcolm Ramsay, Department of Biology, University of Saskatchewan, "Physiological Constraints on Vertebrate Life Histories: Examples from Bears, Birds and Humans." M-149 Biological Sciences Centre.

This symbol denotes environmentally related seminars/events. If you wish to have an environmentally related event listed in this way, please contact: The Environmental Research and Studies Centre, 492-6659.

University of Alberta Alumni Association Maimie S. Simpson Memorial Scholarship

The University of Alberta Alumni Association awards an annual scholarship in honor of Maimie S. Simpson, who served the University and its students for many years as the Dean of Women.

The scholarship has a value of \$1,500 and will be presented to a full-time undergraduate student who has attended the University of Alberta for at least the two previous years.

CRITERIA

The applicant's contribution to campus life and to the University of Alberta community will be the basis for selection.

The applicant should have a satisfactory academic standing and plan to continue studies at the University of Alberta in 1993-94.

Previous recipients of major Alumni Association scholarships (the 75th Anniversary, Maimie S. Simpson Memorial and Reginald C. Lister Scholarships) are not eligible for this award.

Application forms and further information may be obtained from:

Office of Alumni Affairs
430 Athabasca Hall, University of Alberta
Edmonton, Alberta T6G 2E8

The application deadline is Friday, 5 March 1993. The scholarship will be awarded during the 1993-94 academic year.

EVENTS

EXHIBITIONS

CLOTHING AND TEXTILES COLLECTION

Until 18 June

"Changing Suit: The Evolution of Men's Business Wear 1955-85"—an exhibition of men's wear from the collection. Hours: Monday to Friday, 8:30 am to 5 pm. Basement, Home Economics Building.

FAB GALLERY

Until 21 February

"MDF Deco"—an exhibition of experimental furniture design from the Industrial Design Program. Gallery hours: Tuesday to Friday, 10 am to 5 pm; Sunday, 2 to 5 pm; Monday and Saturday, closed. 1-1 Fine Arts Building.

MCMULLEN GALLERY

Until 3 March

"The Dolls of Japan—Shapes of Prayer, Embodiments of Love." Gallery hours: Monday to Friday, 10 am to 4 pm; Saturday and Sunday, 1 to 4 pm (subject to availability of volunteers). Information: 492-8428, 492-4211. Walter C Mackenzie Health Sciences Centre.

FILMS

GERMANIC LANGUAGES

23 February, 7:15 pm

Vor Sonnenaufgang, (1976), German with English subtitles. 141 Arts Building.

MUSIC

DEPARTMENT OF MUSIC

21 February, 2 pm

Faculty Recital—Helmut Brauss, pianist, with the Edmonton Symphony Orchestra. Jubilee Auditorium.

EDMONTON YOUTH ORCHESTRA

21 February, 3 pm

Intermediate Orchestra. \$5/adults, \$3/seniors and students. Convocation Hall.

SPORTS

HOCKEY

19 and 20 February, 7:30 pm

Bears vs Lethbridge

TRACK AND FIELD

26 and 27 February

Canada West Finals

VOLLEYBALL

19 and 20 February, 6:15 pm

Pandas vs Victoria

19 and 20 February, 8 pm

Bears vs Victoria

THEATRE

STUDIO THEATRE

Until 20 February

"The Miser" by Molière. Information and tickets: 492-2495. Myer Horowitz Theatre.

POSITIONS



The University of Alberta is committed to the principle of equity in employment. The University encourages applications from aboriginal persons, disabled persons, members of visible minorities and women.

ACADEMIC

ASSOCIATE VICE-PRESIDENT (RESEARCH)

The Vice-President (Research) invites applications from the academic staff for this full-time appointment.

The Associate Vice-President (Research) will oversee the operation of the base-budgeted Interdisciplinary Research Units (IRUs), will assist with input into the University budget, and will assist in revising, formulating and articulating University of Alberta research policy. In addition, the Associate Vice-President will advise the Vice-President on a wide variety of research issues, including industrial-community relations, and will act for the Vice-President from time to time. The Associate Vice-President will be working closely with the Vice-President to promote and facilitate high standards of research excellence throughout the University.

Staff members interested in this position should communicate directly in writing with the Vice-President (Research), Dr Martha Piper, 3-12C University Hall, by Friday, 19 March 1993. The appointment will be effective 1 July 1993.

SUPPORT STAFF

To obtain further information on the following positions, please contact Personnel Services and Staff Relations, 2-40 Assiniboia Hall, telephone 492-5201. Due to publication lead time and the fact that positions are filled on an ongoing basis, these vacancies cannot be guaranteed beyond 12 February 1993. For a more up-to-date listing, please consult the weekly Employment

Opportunities Bulletin, the postings in PSSR and/or call the Job Information Line at 492-7205 (24 hours). Positions available as of 12 February 1993.

The salary rates for the following positions reflect adjustments in accordance with the new classification system and pay plan.

CLERK TYPIST (Grade 5), Faculty of Agriculture and Forestry, (\$1,891 - \$2,343)

SECRETARY (Grade 5) (Trust), Family Medicine, (\$1,891 - \$2,343)

DEPARTMENTAL/EXECUTIVE SECRETARY (Grade 6), Faculty of Medicine, (\$2,070 - \$2,580)

MEDICAL STENO (Grade 6) (Trust), Medicine (Endocrinology), (\$2,070 - \$2,580)

ADMINISTRATIVE ASSISTANT (Grade 8), Dean of Science, (\$2,437 - \$3,071)

PROGRAMMER ANALYST (Grade 9), Office of the Registrar, (\$2,636 - \$3,343)

The following positions retain salary rates in accordance with the previous classification system and pay plan.

SENIOR FINANCIAL RECORDS CLERK (Term to 31 December 1993), Advancement Services, (\$1,597 - \$2,005)

MEDICAL STENO (Trust), Surgery, (\$1,779 - \$2,273)

TECHNICIAN I/TECHNOLOGIST I (Trust/Part-time/Hourly), Medicine, (\$12.16 - \$14.99/hour)

PROGRAMMER ANALYST I/II (Trust), Biochemistry, (\$2,273 - \$3,497)

PROGRAMMER ANALYST II (Trust/ Term to 1 February 1994), Computing Science (\$2,692 - \$3,497)

ADS

ACCOMMODATIONS AVAILABLE

VICTORIA PROPERTIES - Experienced, knowledgeable realtor with Edmonton references will answer all queries, and send information. No cost or obligation. Call (604) 595-3200, Lois Dutton, Re/Max, Ports West, Victoria, BC.

SHARE - Idlewylde home with two other people. \$270/month plus utilities. Janet/Mike, Western Relocation Services, 434-4629.

RENT - Lansdowne, furnished. Short term, 1 February - 31 March. \$800/month plus utilities. Mike/Janet, Western Relocation, 434-4629.

RENT - Riverbend, Falconer. Exquisite two storey, four bedrooms, many extras. \$1,600/month, immediate. Mike/Janet, Western Relocation Services, 434-4629.

RENT - Parkallen, near University. Two bedroom bungalow, furnished/unfurnished, single garage. Immediate. \$750/month. Janet/Mike, Western Relocation, 434-4629.

SALE - Exceptional Belgravia bungalow, two bedrooms, bright, modern kitchen, newer basement development, south yard, deck. Great location. \$154,900. Ed Lastiwka, Royal LePage Realty, 446-3800, 437-7480.

RENT - Two storey, three bedroom house with den on main floor in north Windsor Park, two blocks west of the University. No pets, nonsmokers preferred. Available 1 March. 433-0646.

RENT - May-July, fully furnished three bedroom house, south Garneau. \$1,200/month. 438-7886, 492-5731.

RENT - Beautiful Glenora bungalow, minutes from University. Two bedrooms main plus one bedroom down, furnished. 1 July 1993 - 30 June 1994. \$1,100/month. 447-5585.

MICHENER PARK - Two bedroom rowhouses and apartments for rent in University residence located in southwest Edmonton. Excellent bus service to University, utilities included. All enquiries welcome, 492-7044.

SALE - Whitemud Way, 4612 151 Street, Riverbend. Gorgeous, 1,800 square foot townhome in mint condition. Loft, oak, jacuzzi, fireplace, \$174,900. Ten minutes to campus. Hugh Moncrieff, Re/Max Real Estate, 488-4000.

SALE - Condo/townhome, Hycourt, #16, 11016 86 Avenue. Three bedrooms, underground parking, fireplace. Large assumable mortgage, list \$134,900. Hugh Moncrieff, Re/Max Real Estate, 488-4000.

RENT - Sabbatical, exceptional two bedroom condo, furnished, parking, University/Strathcona. June/July 1993 - June 1994. \$1,100/month. 492-2800, 439-3424.

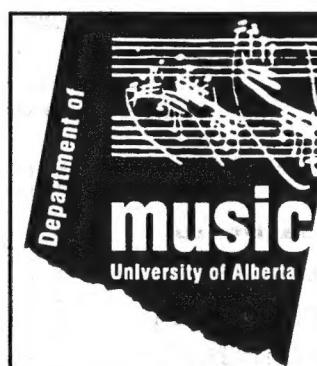
SALE - 1,200' Pleasant View, two bedroom bungalow. Sunken living room, basement suite, extra-large (977m²) mature yard, single detached garage and workshop, gazebo. Close to University. \$140,000. Contact Suzanne, 454-2474.

RENT - Two bedroom suite in house. Near University, renovated, large, very quiet, parking, \$475/month. Georgina, 424-2317.

SALE - Brookside, beautiful bungalow, 1,550'. Maple, hardwood floors, main floor family room, excellent basement development, double detached garage, private deck. This is very desirable. Val Cload, Spencer Realty, 435-0808.

ACCOMMODATIONS WANTED

PROFESSOR ON SABBATICAL, September 1993 - April 1994, looking for furnished accommodation close to campus. Contact: K Leaman, 746 Hanson Street, Fredericton, New Brunswick E3B 3Z9. (506) 455-7215.



Sun., February 21 at 2 pm

Faculty in Concert: Hemut Brauss, piano, with the ESO in the Jubilee Auditorium

Fri., March 5 at 8 pm

Faculty Recital: Stéphane Lemelin, piano, in Convocation Hall, Arts Bldg.

Info: Dept. of Music: 492-3263.

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427-5538

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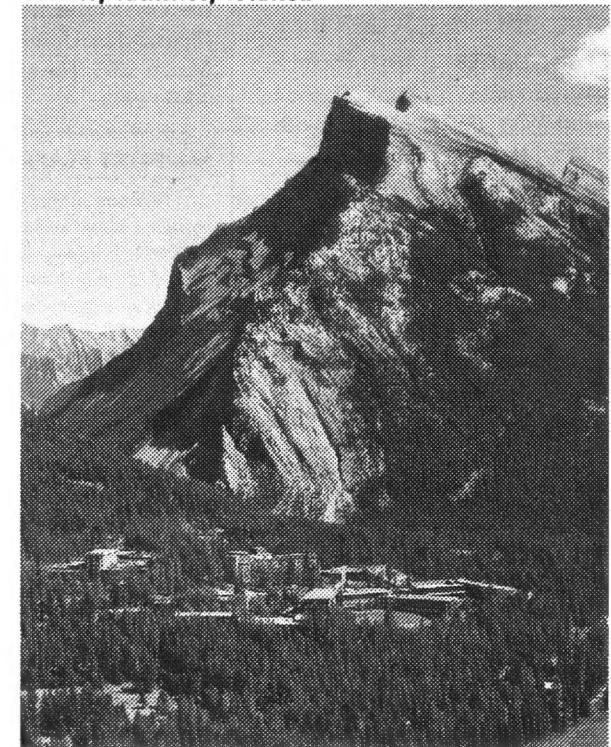
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